Amendments to the Claims

The following listing of the claims replaces all previous listings and versions of the claims in the application.

Listing of the Claims

Claims 1-40: (Cancelled)

41. (New) A device for selectively regulating the flow rate of a fluid, comprising:

a housing including an inlet and an outlet;

a plurality of flow conduits fluidly connected between the inlet and the outlet, each of the flow conduits comprising a resiliently compressible occlusion tube having a length representative of a different pre-defined flow rate; and

a flow rate selection mechanism, operatively mounted in the housing, for selectively obstructing fluid flow through the flow conduits, thereby to provide a flow rate from the inlet to the outlet corresponding to the combined flow rates of the unobstructed flow conduits, wherein the flow rate selection mechanism comprises:

at least first, second, and third flow-blocking elements, each of which is operatively associated with one of the flow conduits, each flow-blocking element being selectively movable into and out of a flow-blocking compression against its associated occlusion tube; and

an actuation mechanism operatively engageable with each of the flow-blocking elements and movable among a plurality of pre-defined positions in all but one of which it operatively engages one or more of the flow-blocking elements to block flow through the flow conduit associated with each of the operatively-engaged flow-blocking elements, and in one position of which it operatively engages none of the flow-blocking elements; wherein the actuation mechanism comprises a cam rotor rotatably mounted in the housing and having a plurality of cam elements disposed thereon in positions in which each of the cam elements may operatively engage and move one of the flow-blocking elements into a flow-blocking compression against its associated occlusion tube as the cam rotor is rotated, wherein the cam rotor is rotatable among a plurality of rotary positions, each of which is associated with a predefined fluid flow rate, and wherein the plurality of cam elements includes at least a first cam element engageable only with the first flow-blocking element, a pair of diametrically-opposed second cam elements engageable

only with the second flow-blocking element, and a plurality of third cam elements engageable only with the third flow-blocking element.

42. (New) The device of claim 41, wherein each of the first, second, and third flow-blocking elements comprises a resilient cam follower finger.

43. (New) The device of Claim 41, wherein the first cam element is an arcuate cam element subtending approximately 180 degrees of arc and located at a first radial distance from the center of the rotor, wherein each of the pair of second cam elements is an arcuate cam element subtending approximately 90 degrees of arc and is located at a second radial distance from the center of the rotor, wherein each of the plurality of third cam elements is an arcuate cam element subtending approximately 45 degrees of arc and is located at a third radial distance from the center of the rotor, and wherein the first radial distance is less than the third radial distance, and the second radial distance is between the first and third radial distances.

44. (New) The device of Claim 43, wherein the plurality of third cam elements comprises four equidistantly-spaced third arcuate cam elements.

45. (New) An infusion system for delivering selectable flow rates of a therapeutic liquid to a patient, comprising:

a pressurized reservoir containing a volume of the liquid and having an outlet; and

a flow-regulating device having an inlet fluidly coupled to the outlet of the reservoir and an outlet coupled to an IV conduit;

wherein the flow-regulating device comprises:

a plurality of flow conduits fluidly connected between the inlet and the outlet, each of the flow conduits having a length representative of a different pre-defined flow rate, each of the flow conduits comprising a resiliently compressible occlusion tube; and

a flow rate selection mechanism for selectively obstructing liquid flow through the flow conduits, thereby to provide a flow rate from the inlet to the outlet corresponding to the combined flow rates of the unobstructed flow conduits, wherein the flow rate selection

mechanism is operable selectively to block liquid flow through (a) none of the flow conduits, and (b) one or more of the conduits, the flow rate selection mechanism comprising:

at least first, second, and third flow-blocking elements, each of which is operatively associated with one of the flow conduits; and

an actuation mechanism that is operable for selectively actuating the flow blocking elements to block flow through the flow conduit associated with each actuated flow-blocking element, wherein the actuation mechanism comprises a cam rotor having a plurality of cam elements, each of which is positioned operatively to move one of the flow-blocking elements into a flow-blocking compression against its associated occlusion tube as the rotor is rotated, and wherein the plurality of cam elements includes at least a first cam element engageable only with the first flow-blocking element, a pair of diametrically-opposed second cam elements engageable only with the second flow-blocking element, and a plurality of third cam elements engageable only with the third flow-blocking element.

46. (New) The infusion system of Claim 45, further comprising a fill valve fluidly coupled between the outlet of the reservoir and the inlet of the flow-regulating device.

47. (New) The infusion system of Claim 45, wherein in the reservoir is pressurized by a pump applying a controllable pressure to the reservoir.

48. (New) The infusion system of Claim 45, wherein each of the flow-blocking elements comprises a resilient cam follower finger located so as to be operatively urged into a compressive engagement with one of the occlusion tubes when the cam follower finger is engaged by a cam element.

49. (New) The infusion system of Claim 45, wherein the cam rotor is rotatable among a plurality of rotary positions, each of which is associated with a predefined fluid flow rate.

50. (New) The infusion system of Claim 45, wherein the first cam element is an arcuate cam element subtending approximately 180 degrees of arc and located at a first radial distance from the center of the rotor, wherein each of the pair of second cam elements is an arcuate cam

element subtending approximately 90 degrees of arc and is located at a second radial distance from the center of the rotor, wherein each of the plurality of third cam elements is an arcuate cam element subtending approximately 45 degrees of arc and is located at a third radial distance from the center of the rotor, and wherein the first radial distance is less than the third radial distance, and the second radial distance is between the first and third radial distances.

51. (New) The infusion system of Claim 50, wherein the plurality of third cam elements comprises four equidistantly-spaced third arcuate cam elements.

52. (New) A device for regulating the flow of a liquid from a pressurized source, comprising:

a housing having an inlet and an outlet;

at least first, second, and third flow conduits in the housing fluidly connecting the inlet and the outlet, each of the flow conduits comprising a flow control tube and a resiliently compressive occlusion tube, wherein the first flow control tube has a first length associated with a first pre-defined flow rate, the second flow control tube has a second length associated with a second pre-defined flow rate, and the third flow control tube has a third length associated with a third pre-defined flow rate;

at least first, second, and third flow-blocking elements, each of which is operatively associated with one of the occlusion tubes and movable into a flow-blocking compression against its associated occlusion tube; and

an actuation mechanism in the housing that is operable (a) to selectively engage and move one or more of the flow-blocking elements into the flow-blocking compression against its associated occlusion tube, and (b) to selectively be disengaged from any of the flow-blocking elements, wherein the actuation mechanism is operatively engageable with each of the flow-blocking elements and is movable among a plurality of pre-defined positions in all but one of which it operatively engages one or more of the flow-blocking elements to block flow through the occlusion tube associated with each of the operatively-engaged flow-blocking elements, and in one position of which it operatively engages none of the flow-blocking elements, the actuation mechanism comprising:

a cam rotor rotatably mounted in the housing and having a plurality of cam elements, each of which is positioned operatively to move one of the flow-blocking elements into a flow-

blocking compression against its associated occlusion tube as the rotor is rotated, and wherein the plurality of cam elements includes at least a first cam element engageable only with the first flow-blocking element, a pair of diametrically-opposed second cam elements engageable only with the second flow-blocking element, and a plurality of third cam elements engageable only with the third flow-blocking element.

53. (New) The device of Claim 52, wherein each of the flow-blocking elements comprises a resilient cam follower finger located so as to be operatively urged into a compressive engagement with one of the occlusion tubes when the cam follower finger is engaged by a cam element.

54. (New) The device of Claim 52, wherein the cam rotor is rotatable among a plurality of rotary positions, each of which is associated with a predefined fluid flow rate.

55. (New) The device of Claim 52, wherein the first cam element is an arcuate cam element subtending approximately 180 degrees of arc and located at a first radial distance from the center of the rotor, wherein each of the pair of second cam elements is an arcuate cam element subtending approximately 90 degrees of arc and is located at a second radial distance from the center of the rotor, wherein each of the plurality of third cam elements is an arcuate cam element subtending approximately 45 degrees of arc and is located at a third radial distance from the center of the rotor, and wherein the first radial distance is less than the third radial distance, and the second radial distance is between the first and third radial distances.

56. (New) The device of Claim 55, wherein the plurality of third cam elements comprises four equidistantly-spaced third arcuate cam elements.

57. (New) A device for selectively regulating the flow rate of a fluid, comprising:

a housing including an inlet and an outlet;

a plurality of flow conduits fluidly connected between the inlet and the outlet, each of the flow conduits having a length representative of a different pre-defined flow rate, wherein each of the flow conduits includes a resiliently compressible occlusion tube; and

a flow rate selection mechanism, operatively mounted in the housing, for selectively obstructing fluid flow through the flow conduits, thereby to provide a flow rate from the inlet to the outlet corresponding to the combined flow rates of the unobstructed flow conduits, wherein the flow rate selection mechanism comprises:

a resilient flow-blocking cam follower element operatively associated with each of the flow conduits, each flow-blocking element being selectively movable into and out of a flow-blocking compression against its associated occlusion tube; and

a cam rotor disc rotatably mounted in the housing and having a lower surface provided with a plurality of cam elements in radial positions in which each of the cam elements is operatively engageable with an associated one of the flow-blocking cam follower elements as the rotor is rotated through a plurality of pre-defined rotational positions, each of the rotational positions being associated with a pre-defined fluid flow rate, wherein in all but one of the rotational positions the cam elements operatively engage at least one of the flow-blocking cam follower elements to move into a flow-blocking compression against its associated occlusion tube, and wherein in one pre-defined rotational position the cam elements operatively engage none of the flow-blocking cam follower elements.

58. (New) The device of claim 57, wherein the housing includes a detent member, and wherein the cam rotor disc has a peripheral edge with a plurality of detent grooves defining the respective rotational positions when engaged by the detent member.

59. (New) The device of claim 57, wherein each of the cam elements is positioned on the lower cam rotor disc surface so as to move one of the resilient elements in a flow-blocking compression against its associated occlusion tube.

60. (New) A device for regulating the flow of a liquid from a pressurized source, comprising:

a housing having an inlet and an outlet;

at least first, second, and third flow conduits in the housing fluidly connecting the inlet and the outlet, each of the flow conduits comprising a flow control tube and a resiliently compressive occlusion tube, the first flow control tube having a first length associated with a first pre-defined flow rate, the second flow control tube having a second length associated with a

second pre-defined flow rate, and the third flow control tube having a third length associated with a third pre-defined flow rate;

a resilient flow-blocking cam follower element operatively associated with each of the occlusion tubes and movable into a flow-blocking compression against its associated occlusion tube; and

an actuation mechanism in the housing that is operable (a) to selectively engage and move one or more of the flow-blocking cam follower elements into the flow-blocking compression against its associated occlusion tube, and (b) to selectively be disengaged from any of the flow-blocking cam follower elements, wherein the actuation mechanism comprises a cam rotor disc rotatably mounted in the housing and having a lower surface provided with a plurality of cam elements in radial positions in which each of the cam elements is operatively engageable with an associated one of the flow-blocking cam follower elements as the rotor is rotated through a plurality of pre-defined rotational positions, each of the rotational positions being associated with a pre-defined fluid flow rate, wherein in all but one of the rotational positions the cam elements operatively engage one or more of the flow-blocking cam follower elements to block flow through the occlusion tube associated with each of the operatively-engaged flow-blocking elements, and wherein in one pre-defined rotational position the cam elements operatively engage none of the flow-blocking cam follower elements.

61. (New) The device of claim 60, wherein the housing includes a detent member, and wherein the cam rotor disc has a peripheral edge with a plurality of detent grooves defining the respective rotational positions when engaged by the detent member.